SRF-M97

SERVICE MANUAL

Ver. 1.2 2005.02

US Model
AEP Model
E Model
Australian Model
Chinese Model
Tourist Model

SPECIFICATIONS

Time display:

North and South American countries/regions	12-hour system
Other countries/regions	24-hour system

Frequency range:
Model for North and South America countries/regions

Band	Frequency range	Channel step
FM	87.5 - 108 MHz	0.1 MHz
AM	530 - 1 710 kHz	10 kHz
	531 - 1 710 kHz	9 kHz

Model for Other countries/regions

Band	Frequency range	Channel step
FM	87.5 - 108 MHz	0.05 MHz
AM	531 - 1 602 kHz	9 kHz
	530 - 1 610 kHz	10 kHz

Tourist model

Band	Frequency range	Channel step
FM	76 - 108 MHz	0.05 MHz
AM	531 - 1 710 kHz	9 kHz
	530 - 1 710 kHz	10 kHz

Output:
🎧 (headphones) jack
(ø3.5 mm, stereo minijack)
Power output:
2 mW + 2 mW (at 10 % harmonic distortion)
Power requirements:
1.5 V DC, one R03 (size AAA) battery
Auto Power off function:
Approx. 30 minutes, 60 minutes, 90minutes, 120 minutes, and off
Dimensions:
Approx. 37.4 × 84.6 × 21.6 mm (w/h/d)
(Approx. $1\ ^{1}/_{2} \times 3\ ^{3}/_{8} \times\ ^{7}/_{8}$ inches)
incl. projecting parts and controls
Mass:
Approx. 58.5 g (2.06 oz.)
incl. battery and the headphones

Accessories supplied
Stereo headphones (1)
Sony R03 (size AAA) battery (1) (for trial*) (Tourist model)

* The supplied battery is for trial. We recommend you to purchase a Sony alkaline LR03 (size AAA) battery.

Design and specifications are subject to change without notice.

Battery Life (Approx. hours) (JEITA*)

When using	FM	AM
Sony alkaline LR03 (size AAA)	40	65
Sony R03 (size AAA)	16	30

* Measured by JEITA (Japan Electronics and Information Technology Industries Association) standards. The actual battery life may vary depending on the circumstance of the unit.

FM STEREO/AM PLL SYNTHESIZED RADIO

9-879-289-03
2005B05-1
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Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

SONY®

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscou-s (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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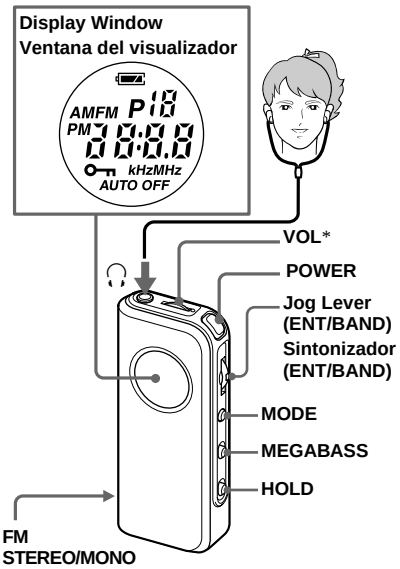
SECTION 1
GENERAL

This section is extracted from instruction manual.

Front

Parte frontal



*** There is a tactile dot beside VOL to show the direction to turn up the volume.**

*** Al lado de la tecla VOL hay un punto táctil que muestra el sentido para subir el volumen.**

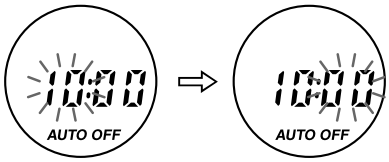
Setting the Clock

The clock system varies depending on the model you own.
12-hour system: “AM 12:00” = midnight
24-hour system: “0:00” = midnight
The time display of this clock is a 24-hour system.

1 Press **POWER** to turn off the power.

2 Press and hold down the jog lever for more than 2 seconds until “the hour” starts flashing.

3 Slide or keep sliding the jog lever up or down to adjust the hour and press the jog lever.
If you keep sliding the jog lever up or down, the number changes rapidly.



4 Slide the jog lever up or down to adjust the minutes and press the jog lever.
“:” starts flashing and the clock starts operating.
To set the current time exactly to the second, adjust the minute and then press the jog lever in time with a time signal (such as a radio station).
To cancel the setting, press **MODE**.

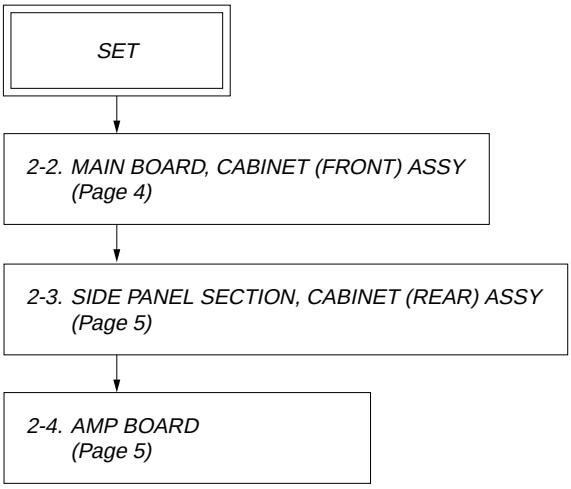
Note

Once you start setting the clock, you must perform each step within about 65 seconds, or the clock setting mode will be cancelled.

SECTION 2
DISASSEMBLY

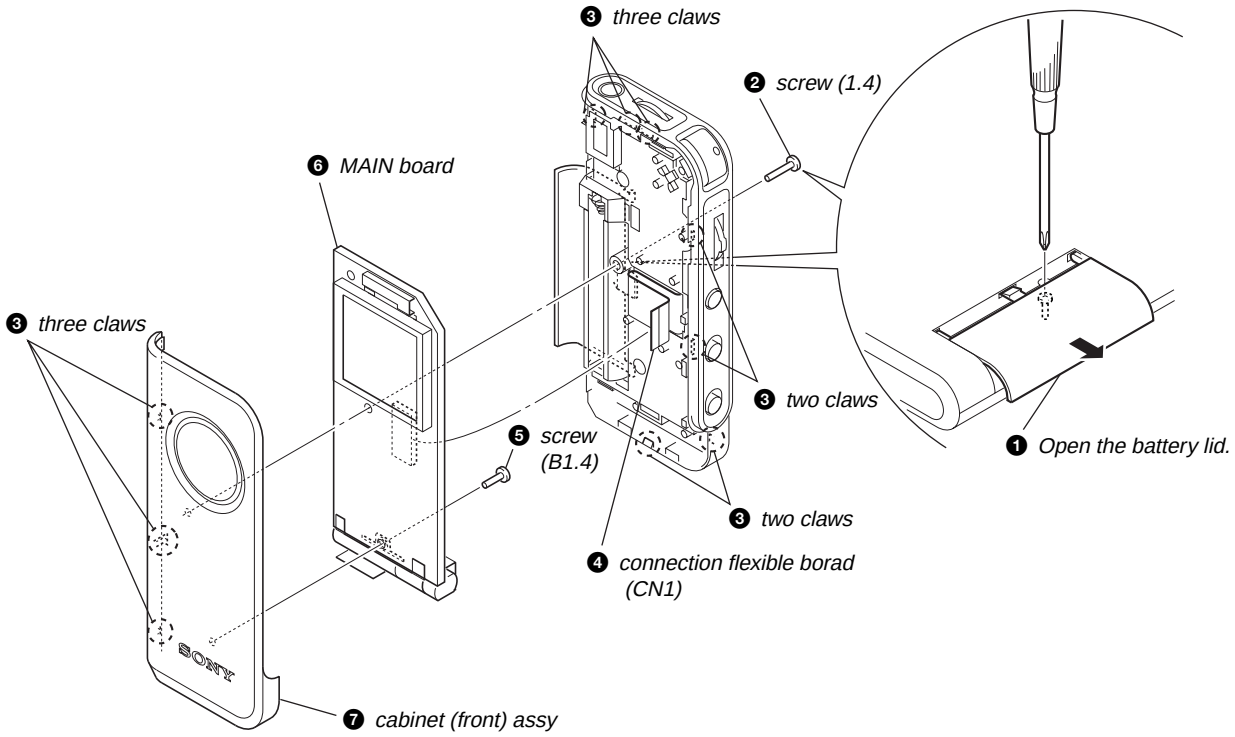
- This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

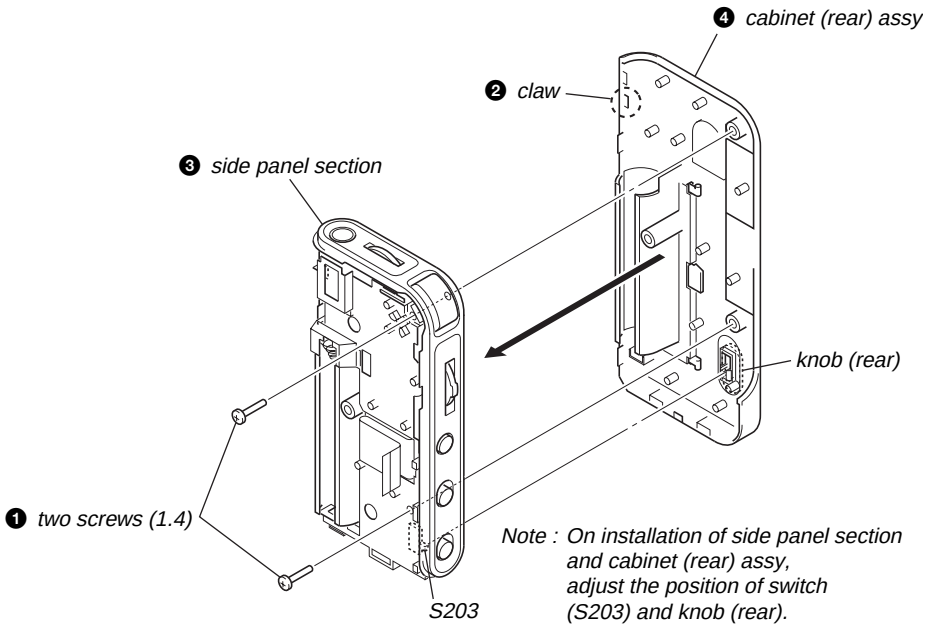


Note: Follow the disassembly procedure in the numerical order given.

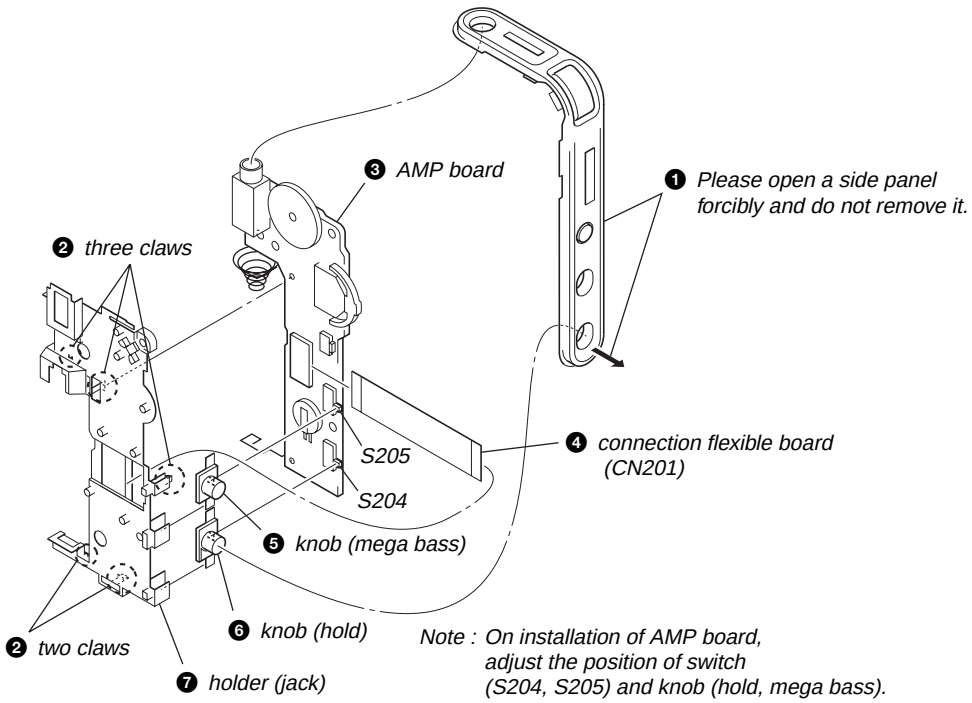
2-2. MAIN BOARD, CABINET (FRONT) ASSY



2-3. SIDE PANEL SECTION, CABINET (REAR) ASSY


❹ cabinet (rear) assy
❷ claw
❸ side panel section
knob (rear)
❶ two screws (1.4)
S203
Note : On installation of side panel section and cabinet (rear) assy, adjust the position of switch (S203) and knob (rear).

2-4. AMP BOARD

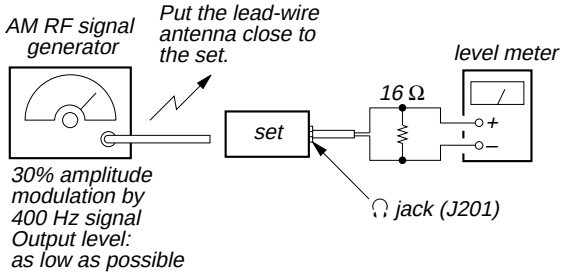

❸ AMP board
❶ Please open a side panel forcibly and do not remove it.
❷ three claws
❹ connection flexible board (CN201)
S205
S204
❺ knob (mega bass)
❷ two claws
❻ knob (hold)
❼ holder (jack)
Note : On installation of AMP board, adjust the position of switch (S204, S205) and knob (hold, mega bass).

SECTION 3
ELECTRICAL ADJUSTMENTS

0 dB=1 µV

( ): US, Panama models
[ ]: Tourist model

[AM]
Setting:
Band: AM



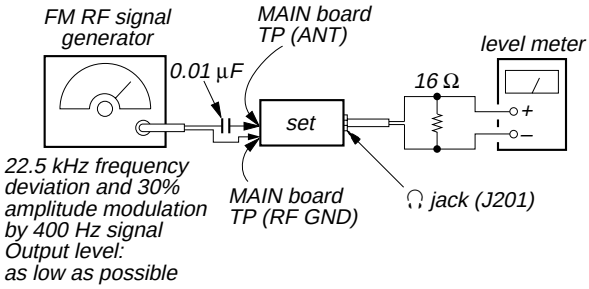
AM VT VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter
L6	531 (530) [531] kHz	1.2 ± 0.05 V
Confirmation	1,602 (1,710) [1,710] kHz	7.5 (7.9) [7.9] ± 0.5 V

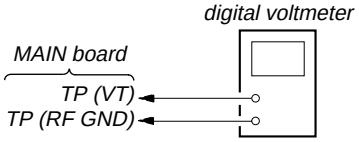
( ): US, Panama models

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L4	585 kHz (590 kHz)
CT3	1,485 kHz (1,490 kHz)

( ): US, Panama models
[ ]: Tourist model

[FM]
Setting:
Band: FM





FM VT VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter
Confirmation	87.5 (87.5) [76.0] MHz	2.8 (2.6) [1.0] ± 0.2 V
Confirmation	108.0 MHz	10.4 (9.5) [8.2] ± 1.0 V

[ ]: Tourist model

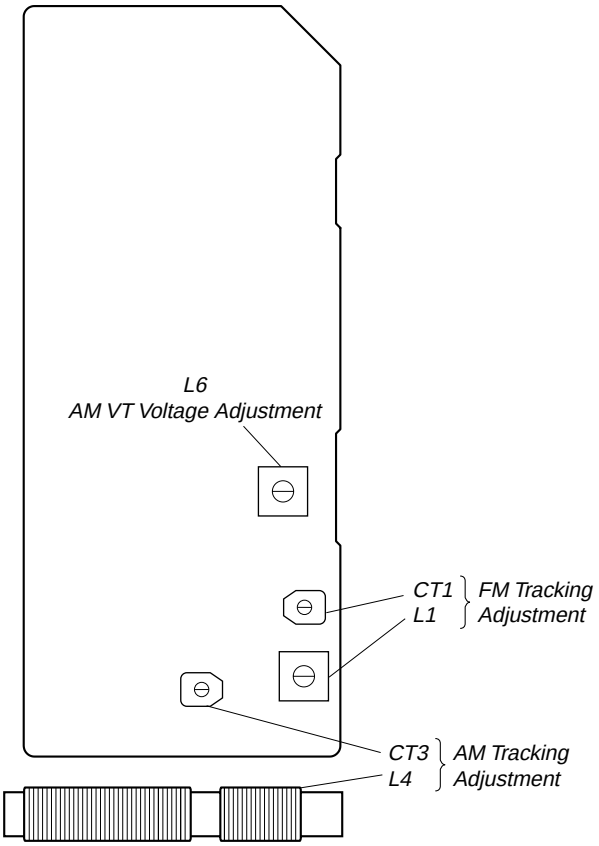
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L1	87.5 [76.0] MHz
CT1	108.0 MHz

Adjustment Location: MAIN board (See page 7)

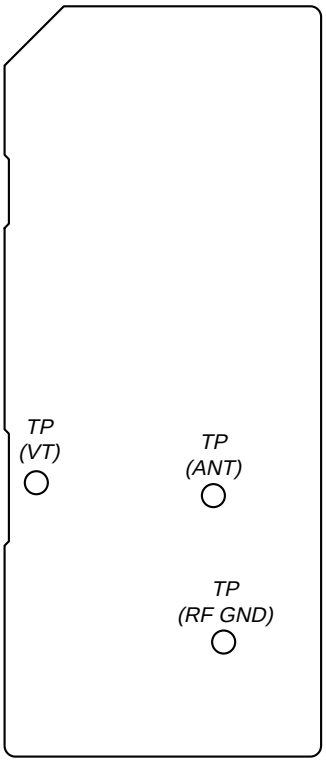
- Repeat the procedures in each adjustment several times, and the tracking adjustments should be finally done by the trimmer capacitors.

Adjustment Location:

– MAIN BOARD (Component Side) –



– MAIN BOARD (Conductor Side) –



SECTION 4
DIAGRAMS

- **Note for Printed Wiring Boards and Schematic Diagrams**

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▭ : Pattern from the side which enables seeing.

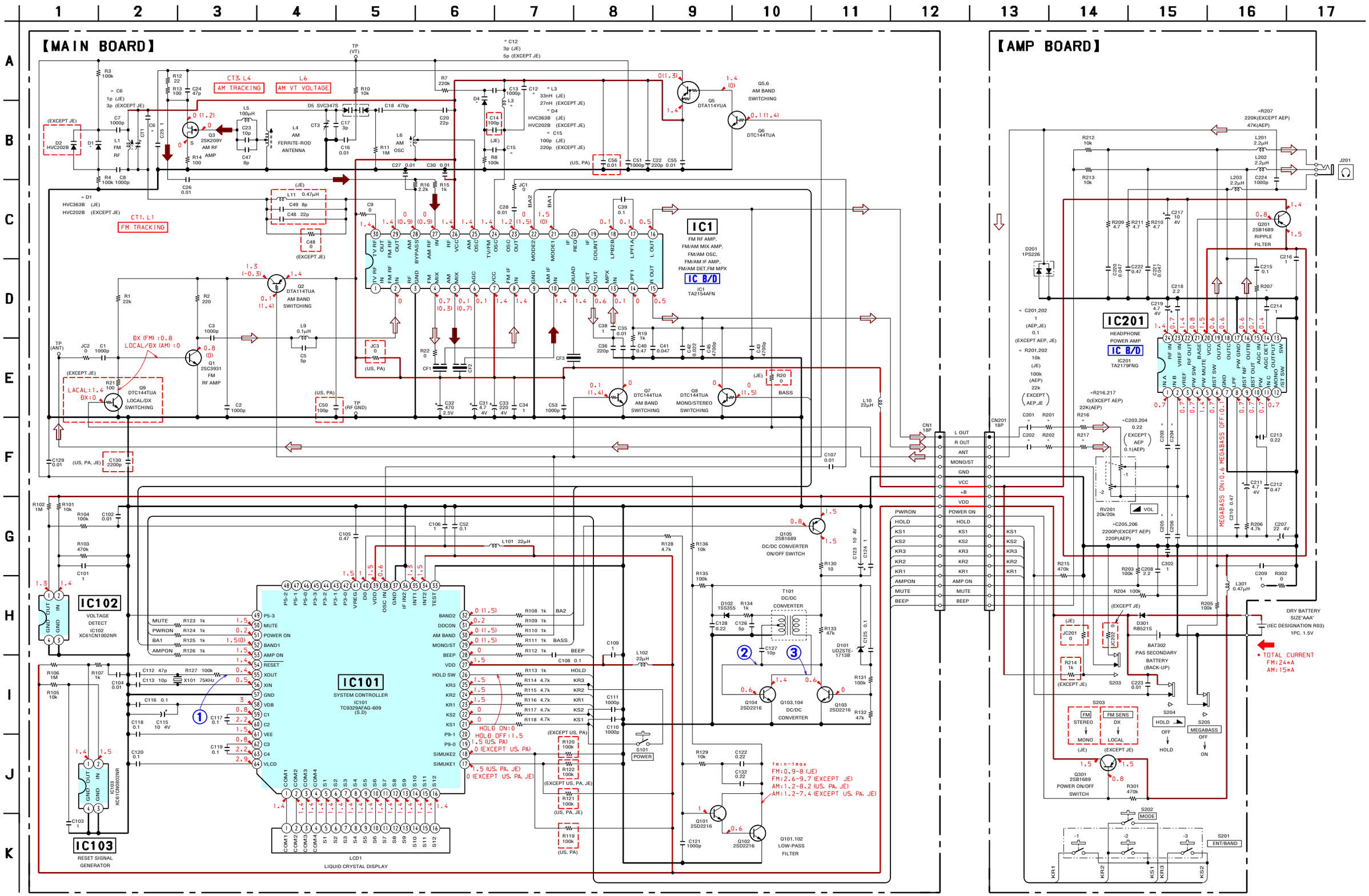
(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- ▬ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 1.5 V and fed with regulated dc power supply from battery teminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM
- Abbreviation
  JE : Tourist model
  PA : Panama model

4-1. SCHEMATIC DIAGRAM • See page 12 for Waveforms. • See page 12 for IC Block Diagrams. • See page 13 for IC Pin Function Description.

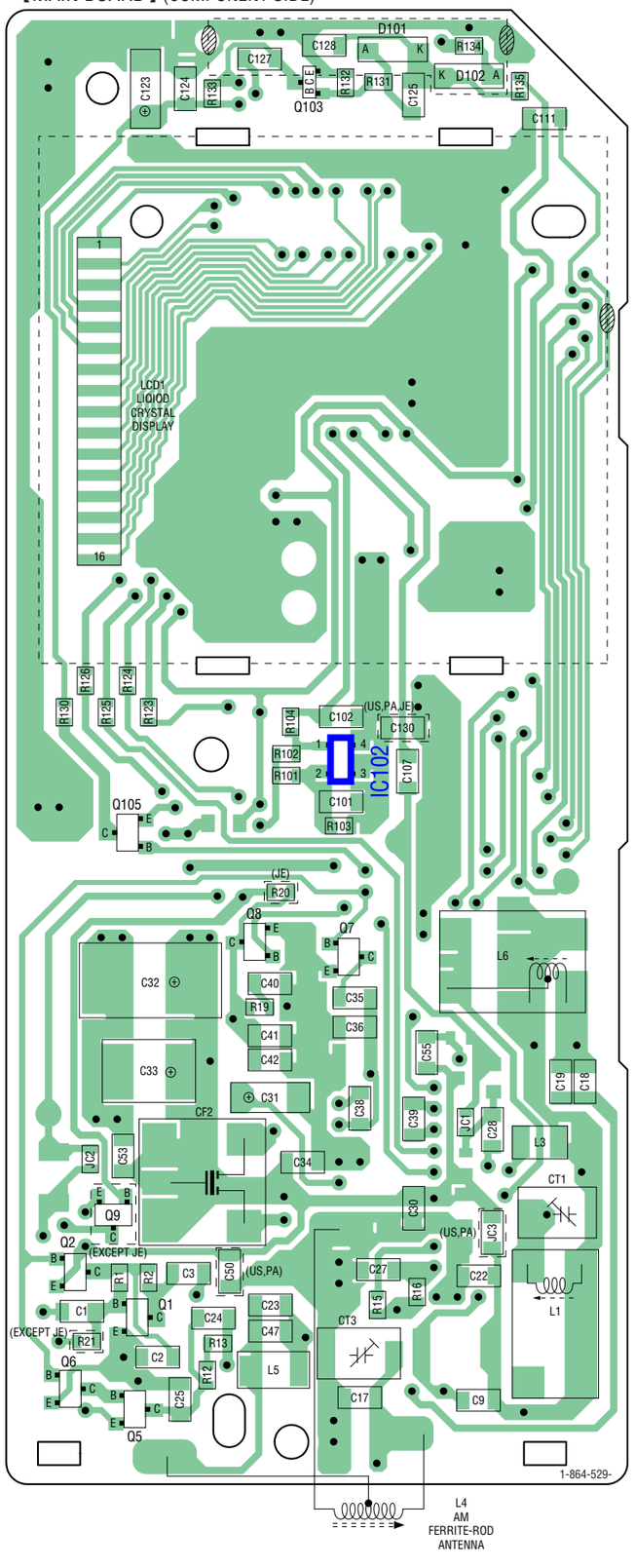


4-2. PRINTED WIRING BOARD – MAIN Board – :Uses unleaded solder.

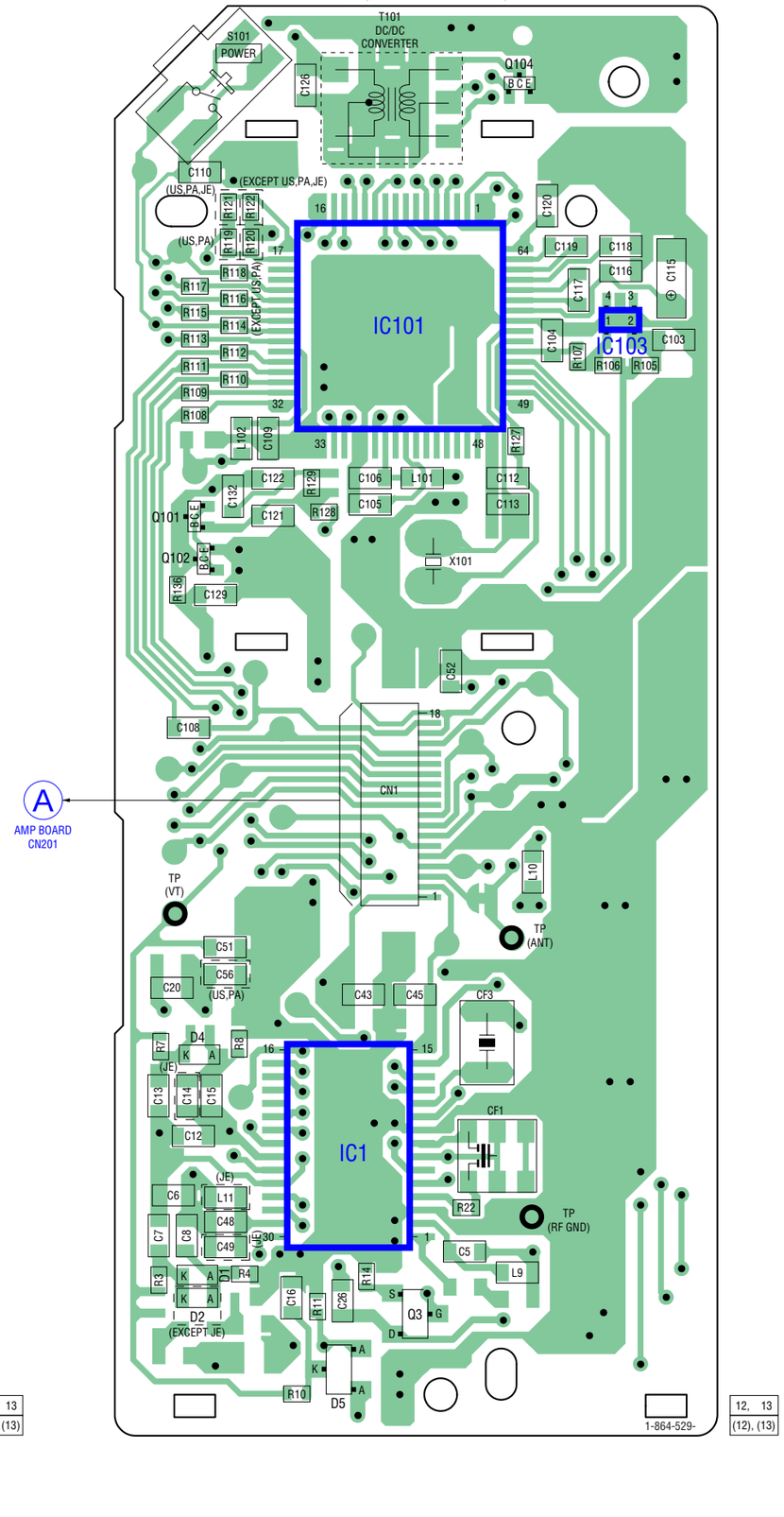
- **Semiconductor Location**

Ref. No.	Location
D1	I-6
D2	I-6
D4	G-6
D5	I-7
D101	A-3
D102	A-4
IC1	H-7
IC101	C-7
IC102	E-3
IC103	C-9
Q1	I-2
Q2	H-1
Q3	I-7
Q5	I-2
Q6	I-1
Q7	G-3
Q8	F-2
Q9	H-1
Q101	D-6
Q102	D-6
Q103	A-3
Q104	A-8
Q105	F-2

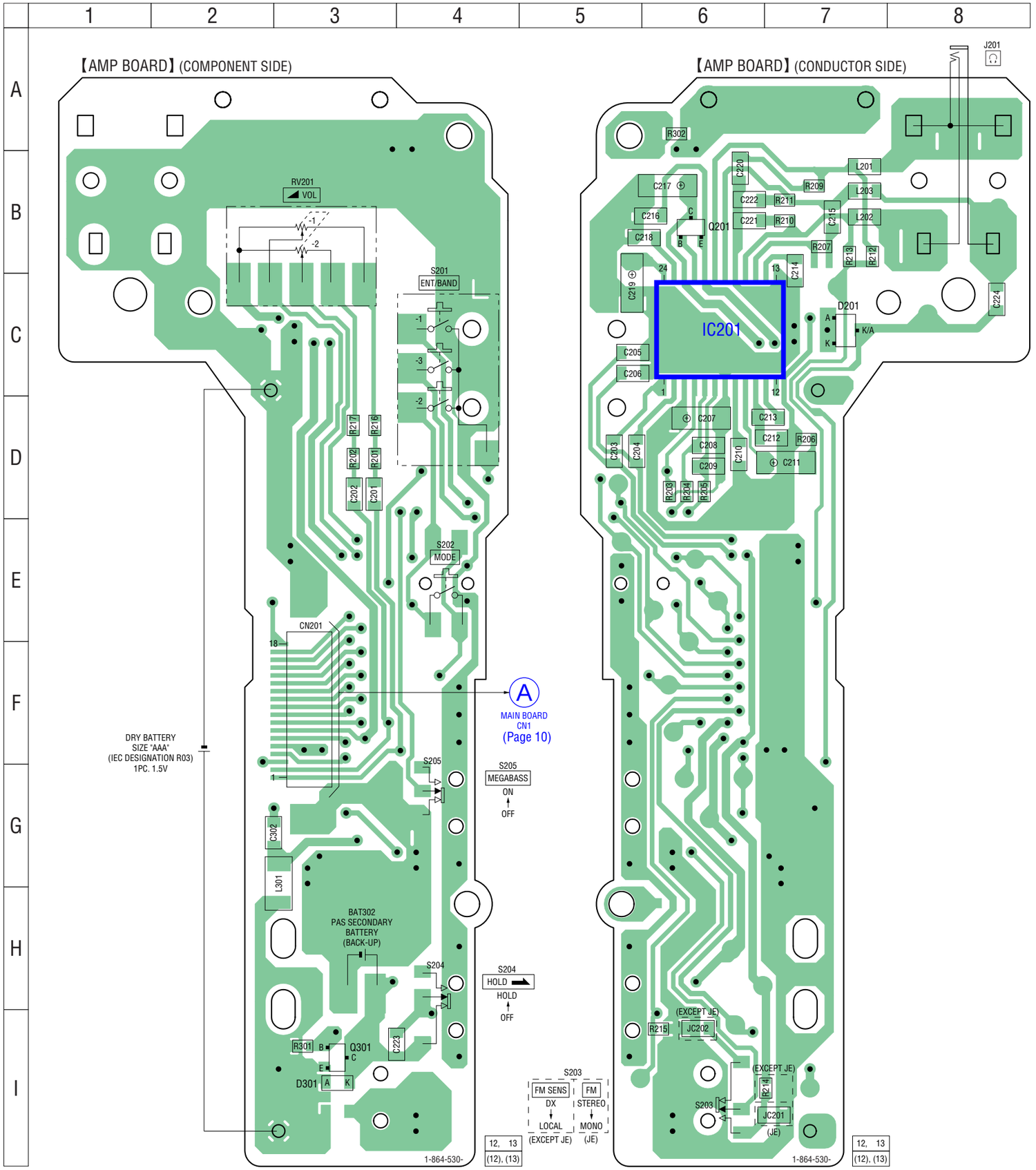
【MAIN BOARD】(COMPONENT SIDE)



【MAIN BOARD】(CONDUCTOR SIDE)



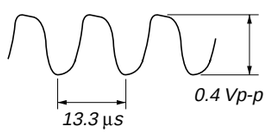
4-3. PRINTED WIRING BOARD – AMP Board – :Uses unleaded solder.



- **Waveforms**

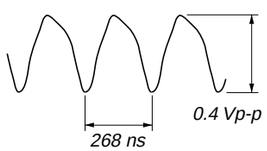
– MAIN Board –

① IC101 ㊺ (XOUT)



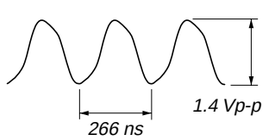
200 mV/DIV, 5 µs/DIV

② Q103 (Collector), Q104 (Base)



200 mV/DIV, 100 ns/DIV

③ Q104 (Collector)

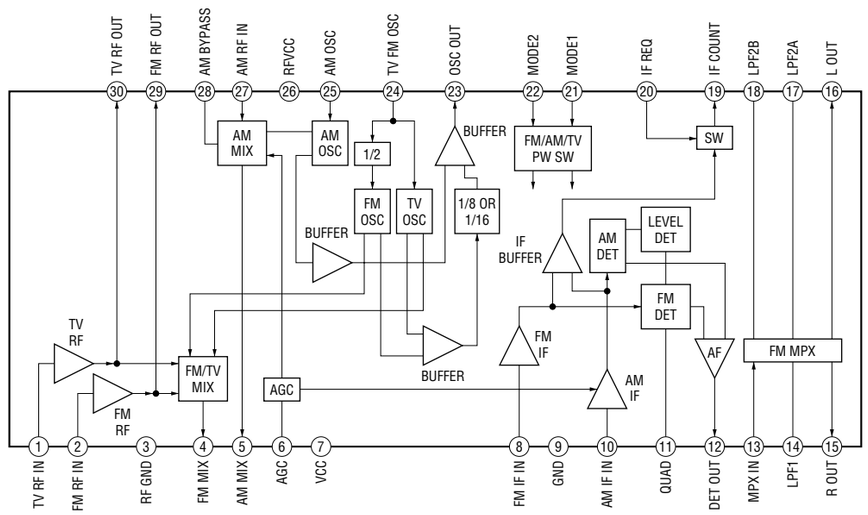


500 mV/DIV, 100 ns/DIV

- **IC Block Diagrams**

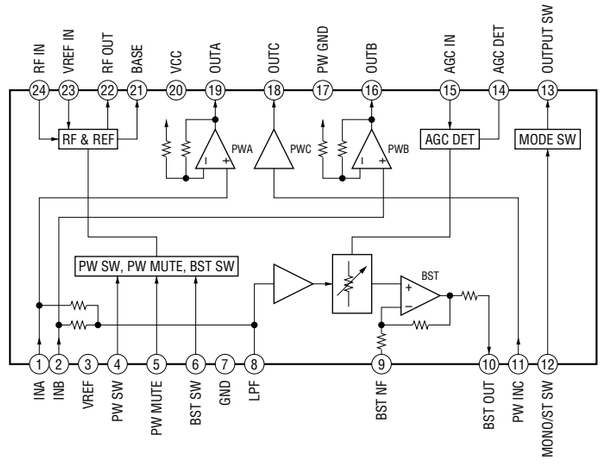
– MAIN Board –

IC1 TA2154AFN-EL



– AMP Board –

IC201 TA2179FNG (EL)



- **IC Pin Function Description**

MAIN BOARD IC101 TC9329AFAG-609 (S.D) (SYSTEM CONTROLLER)

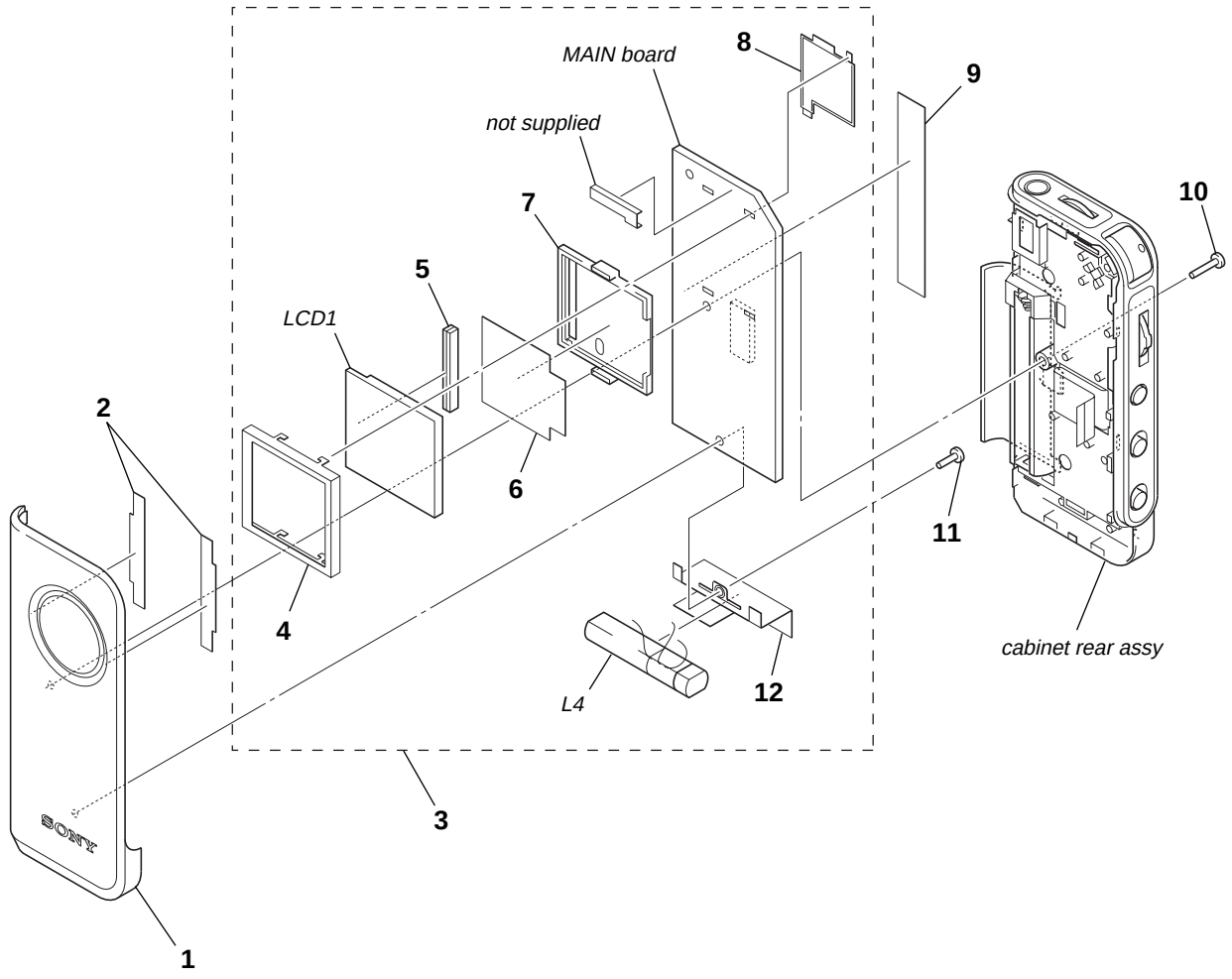
Pin No.	Pin Name	I/O	Description
1 to 4	COM1 to COM4	O	Common drive signal output to the liquid crystal display
5 to 16	S1 to S12	O	Segment drive signal output to the liquid crystal display
17	SIMUKE1	I	Setting terminal for the destination "L": Except US, Panama and Tourist models, "H": US, Panama and Tourist models
18	SIMUKE2	I	Setting terminal for the destination "L": Except US and Panama models, "H": US and Panama models
19, 20	P9-0, P9-1	I	Not used
21, 22	KS1, KS2	O	Key source signal output to the key matrix
23 to 25	KR1 to KR3	I	Key return signal input from the key matrix
26	HOLD SW	I	HOLD switch input terminal "L": hold on
27	VDD	-	Power supply terminal (+1.5V)
28	BEEP	O	Beep signal output terminal
29	MONO/ST	O	Mono/stereo selection signal output terminal "L": stereo, "H": mono
30	AM BAND	O	AM band selection signal output terminal "H": AM
31	DDCON	O	DC/DC converter on/off control signal output terminal "L": DC/DC converter on
32	BAND2	O	Band selection signal output terminal "L": FM, "H": AM
33	TEST	I	Test mode control signal input terminal Not used
34	INT2	I	Battery detection signal input terminal "L": battery mark residual quantity less display lights up
35	INT1	I	1.0V voltage detection signal input terminal "L": battery mark residual quantity less display lights up
36	IF IN2	I	IF pulse signal input terminal Not used
37	GND	-	Ground terminal
38	OSC IN	I	VCO input from the FM/AM front-end
39	VDD	-	Power supply terminal (+1.5V)
40	D0	O	Phase comparator output terminal
41	VREG	-	Constant voltage power supply output terminal for the phase comparator (+1.5V)
42 to 45	P3-0 to P3-3	I	Not used
46 to 49	P5-0 to P5-3	I	Not used
50	MUTE	O	Muting on/off control signal output to the headphone power amplifier "L": muting on
51	POWER ON	O	Power supply on/off control signal output terminal "L": power on
52	BAND1	O	Band selection signal output terminal "L": AM, "H": FM
53	AMP ON	O	Audio amplifier on/off control signal output to the headphone power amplifier "H": Audio amplifier on
54	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
55	XOUT	O	System clock output terminal (75 kHz)
56	XIN	I	System clock input terminal (75 kHz)
57	GND	-	Ground terminal
58	VDB	-	Terminal for power supply voltage pressure up
59, 60	C1, C2	-	Connection terminal of the capacitor for power supply voltage pressure up
61	VEE	-	Constant voltage power supply output terminal for the liquid crystal display drive (+1.5V)
62, 63	C3, C4	-	Connection terminal of the capacitor for liquid crystal display drive voltage pressure up
64	VCLD	-	Liquid crystal display drive voltage power supply output terminal

SECTION 5
EXPLODED VIEWS

NOTE:

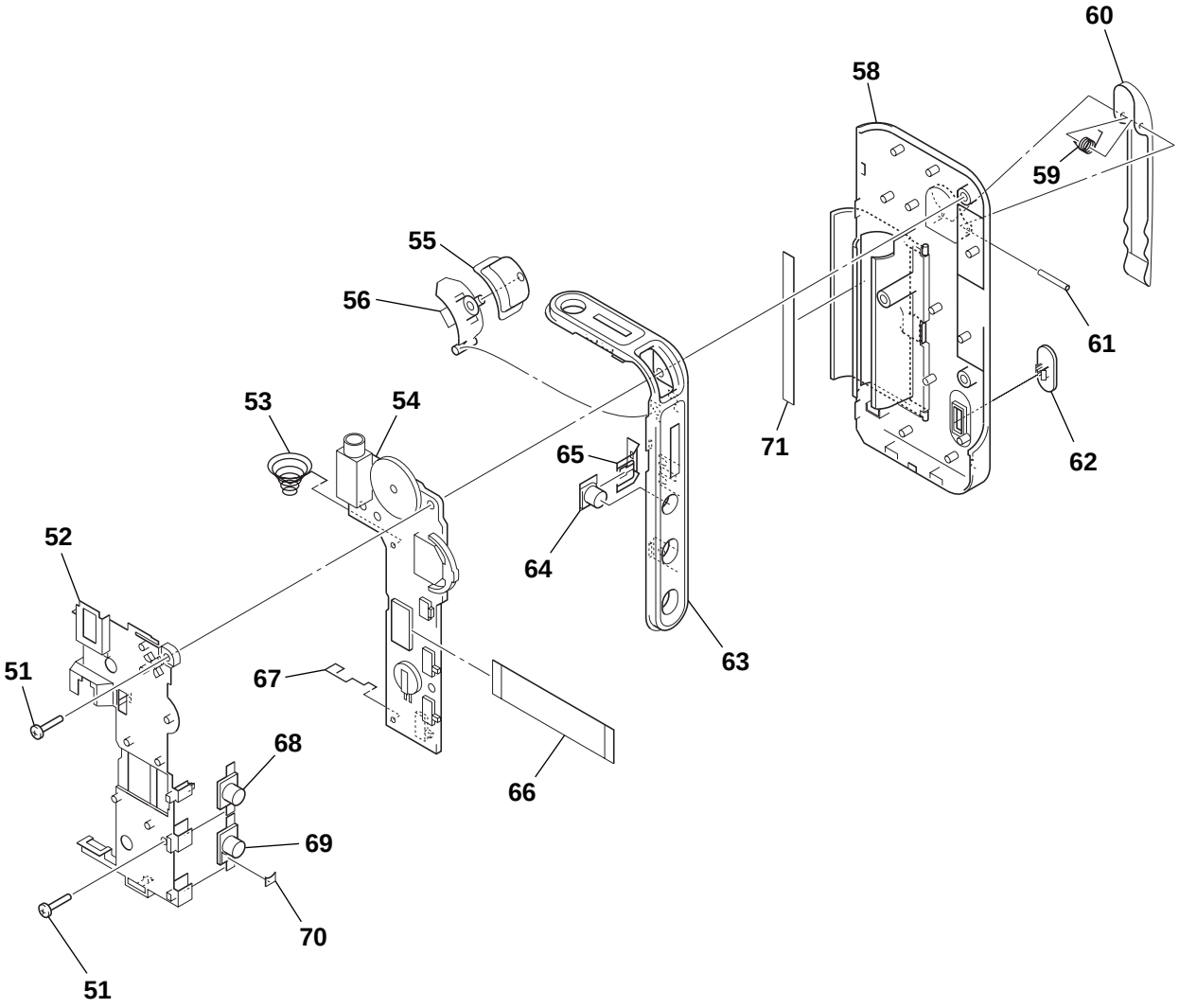
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  AUS : Australian model PA: Panama model
  CH : Chinese model
  JE : Tourist model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

5-1. CABINET (FRONT) SECTION



Ref. No.	Part No.	Description	Remark
1	X-2024-706-2	CABINET (FRONT) ASSY	
2	2-189-433-01	SHEET, INSULATING	
3	A-1085-523-A	MAIN BOARD, COMPLETE (JE)	
3	A-1085-531-A	MAIN BOARD, COMPLETE (EXCEPT US, PA, JE)	
3	A-1096-774-A	MAIN BOARD, COMPLETE (US, PA)	
4	2-189-430-01	CASE (LCD)	
5	1-694-757-11	CONDUCTIVE BOARD, CONNECTION	
6	2-189-432-01	LEAF (LCD), COPPER	
7	2-189-420-01	HOLDER (LCD)	
8	2-348-455-01	LEAF (MC), COPPER	
9	2-190-137-01	SHEET (BATT)	
10	3-252-824-01	SCREW (1.4)	
11	3-254-136-01	SCREW (B1.4)	
12	2-189-419-01	HOLDER (ANT)	
L4	1-419-843-21	COIL, FERRITE-ROD ANTENNA (MW)	
LCD1	1-805-704-11	DISPLAY PANEL, LIQUID CRYSTAL	

5-2. CABINET (REAR) SECTION



Ref. No.	Part No.	Description	Remark
51	3-252-824-01	SCREW (1.4)	
52	2-189-418-01	HOLDER (JACK)	
53	2-189-428-01	TERMINAL (–), BATTERY	
54	A-1079-165-A	AMP BOARD, COMPLETE (JE)	
54	A-1085-528-A	AMP BOARD, COMPLETE (EXCEPT AEP, JE)	
54	A-1090-510-A	AMP BOARD, COMPLETE (AEP)	
55	2-189-425-01	CAP (POWER)	
56	2-189-421-01	BUTTON (POWER)	
58	X-2024-707-1	CABINET (REAR) ASSY (AEP)	
58	X-2024-708-1	CABINET (REAR) ASSY (E)	
58	X-2024-709-1	CABINET (REAR) ASSY (US, PA, AUS, CH)	
58	X-2024-771-1	CABINET (REAR) ASSY (JE)	
59	3-244-861-01	SPRING (CLIP)	

Ref. No.	Part No.	Description	Remark
60	3-244-857-01	CLIP	
61	7-626-305-31	SPRING-PIN 1X8	
62	2-189-427-01	KNOB (REAR)	
63	2-189-416-01	PANEL, SIDE	
64	2-189-426-01	CAP (MODE)	
65	2-189-422-01	BUTTON (MODE)	
66	1-679-616-11	CONNECTION FLEXIBLE BOARD	
67	2-189-429-01	TERMINAL (+), BATTERY	
68	2-189-423-01	KNOB (MEGA BASS)	
69	2-189-424-01	KNOB (HOLD)	
70	2-189-434-01	SHEET (HOLD)	
71	2-348-456-01	CUSHION (LID)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  JE : Tourist model
  PA : Panama model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA... : µA... uPA... : µPA...
  uPB... : µPB... uPC... : µPC...
  uPD... : µPD...
- CAPACITORS
  uF: µF
- COILS
  uH: µH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-1079-165-A	AMP BOARD, COMPLETE (JE)			
	A-1085-528-A	AMP BOARD, COMPLETE (EXCEPT AEP, JE)			
	A-1090-510-A	AMP BOARD, COMPLETE (AEP)			
		**********			
		< BATTERY >			
BAT302	1-756-305-11	BATTERY, PAS SECONDARY			
		< CAPACITOR >			
C201	1-115-156-11	CERAMIC CHIP	1uF		10V (AEP, JE)
C201	1-164-156-11	CERAMIC CHIP	0.1uF		25V (EXCEPT AEP, JE)
C202	1-115-156-11	CERAMIC CHIP	1uF		10V (AEP, JE)
C202	1-164-156-11	CERAMIC CHIP	0.1uF		25V (EXCEPT AEP, JE)
C203	1-164-156-11	CERAMIC CHIP	0.1uF		25V (AEP)
C203	1-165-128-11	CERAMIC CHIP	0.22uF		16V (EXCEPT AEP, JE)
C204	1-164-156-11	CERAMIC CHIP	0.1uF		25V (AEP)
C204	1-165-128-11	CERAMIC CHIP	0.22uF		16V (EXCEPT AEP, JE)
C205	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (EXCEPT AEP, JE)
C205	1-164-230-11	CERAMIC CHIP	220PF	5%	50V (AEP)
C206	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (EXCEPT AEP, JE)
C206	1-164-230-11	CERAMIC CHIP	220PF	5%	50V (AEP)
C207	1-104-847-11	TANTALUM CHIP	22uF	20%	4V
C208	1-135-834-11	CERAMIC CHIP	2.2uF		6.3V
C209	1-115-156-11	CERAMIC CHIP	1uF		10V
C210	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C211	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C212	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C213	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C214	1-115-156-11	CERAMIC CHIP	1uF		10V
C215	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C216	1-115-156-11	CERAMIC CHIP	1uF		10V
C217	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C218	1-135-834-11	CERAMIC CHIP	2.2uF		6.3V
C219	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C220	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C221	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C222	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C223	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C224	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C302	1-115-156-11	CERAMIC CHIP	1uF		10V
		< CONNECTOR >			
CN201	1-573-927-11	CONNECTOR, FFC/FPC (ZIF) 18P			
		< DIODE >			
D201	8-719-062-51	DIODE 1PS226-115			
D301	8-719-071-34	DIODE RB521S-30-TE61			
		< IC >			
IC201	6-705-694-01	IC TA2179FNG (EL)			
		< JACK >			
J201	1-563-857-31	JACK, HEADPHONE (∩)			
		< SHORT >			
JC201	1-216-864-11	SHORT CHIP	0 (JE)		
JC202	1-216-864-11	SHORT CHIP	0 (EXCEPT JE)		
		< COIL >			
L201	1-412-983-11	INDUCTOR	2.2uH		
L202	1-412-983-11	INDUCTOR	2.2uH		
L203	1-412-983-11	INDUCTOR	2.2uH		
L301	1-412-935-11	INDUCTOR	0.47uH		
		< TRANSISTOR >			
Q201	6-550-044-01	TRANSISTOR	2SB1689-T106		
Q301	6-550-044-01	TRANSISTOR	2SB1689-T106		
		< RESISTOR >			
R201	1-218-965-11	RES-CHIP	10K	5%	1/16W (JE)
R201	1-218-969-11	RES-CHIP	22K	5%	1/16W (EXCEPT AEP, JE)
R201	1-218-977-11	RES-CHIP	100K	5%	1/16W (AEP)

Ref. No.	Part No.	Description			Remark
R202	1-218-965-11	RES-CHIP	10K	5%	1/16W (JE)
R202	1-218-969-11	RES-CHIP	22K	5%	1/16W (EXCEPT AEP, JE)
R202	1-218-977-11	RES-CHIP	100K	5%	1/16W (AEP)
R203	1-218-977-11	RES-CHIP	100K	5%	1/16W
R204	1-218-977-11	RES-CHIP	100K	5%	1/16W
R205	1-218-977-11	RES-CHIP	100K	5%	1/16W
R206	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R207	1-218-973-11	RES-CHIP	47K	5%	1/16W (AEP)
R207	1-218-981-11	RES-CHIP	220K	5%	1/16W (EXCEPT AEP)
R209	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R210	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R211	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R212	1-218-965-11	RES-CHIP	10K	5%	1/16W
R213	1-218-965-11	RES-CHIP	10K	5%	1/16W
R214	1-218-953-11	RES-CHIP	1K	5%	1/16W (EXCEPT JE)
R215	1-218-985-11	RES-CHIP	470K	5%	1/16W
R216	1-218-969-11	RES-CHIP	22K	5%	1/16W (AEP)
R216	1-218-990-11	SHORT CHIP	0 (EXCEPT AEP)		
R217	1-218-969-11	RES-CHIP	22K	5%	1/16W (AEP)
R217	1-218-990-11	SHORT CHIP	0 (EXCEPT AEP)		
R301	1-218-985-11	RES-CHIP	470K	5%	1/16W
R302	1-218-990-11	SHORT CHIP	0		
		< VARIABLE RESISTOR >			
RV201	1-227-245-11	RES, VAR CARBON 20K/20K (◢ VOL)			
		< SWITCH >			
S201	1-786-034-21	SWITCH, LEVER (SLIDE) (ENT/BAND)			
S202	1-771-627-21	SWITCH, TACTILE (MODE)			
S203	1-572-922-11	SWITCH, SLIDE (FM (JE), FM SENS (EXCEPT JE))			
S204	1-572-922-11	SWITCH, SLIDE (HOLD ➞)			
S205	1-572-922-11	SWITCH, SLIDE (MEGABASS)			
**********					
	A-1085-523-A	MAIN BOARD, COMPLETE (JE)			
	A-1085-531-A	MAIN BOARD, COMPLETE (EXCEPT US, PA, JE)			
	A-1096-774-A	MAIN BOARD, COMPLETE (US, PA)			
		**********			
	1-694-757-11	CONDUCTIVE BOARD, CONNECTION			
	2-189-419-01	HOLDER (ANT)			
	2-189-420-01	HOLDER (LCD)			
	2-189-430-01	CASE (LCD)			
	2-189-432-01	LEAF (LCD), COPPER			
	2-348-455-01	LEAF (MC), COPPER			
		< CAPACITOR/SHORT >			
C1	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C2	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C3	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C5	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C6	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V (JE)

Ref. No.	Part No.	Description			Remark
C6	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V (EXCEPT JE)
C7	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C8	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C9	1-216-864-11	SHORT CHIP	0		
C12	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V (JE)
C12	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V (EXCEPT JE)
C13	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
C14	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (JE)
C15	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (JE)
C15	1-164-230-11	CERAMIC CHIP	220PF	5%	50V (EXCEPT JE)
C16	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C17	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V
C18	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C20	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C22	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C23	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C24	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C25	1-115-156-11	CERAMIC CHIP	1uF		10V
C26	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C27	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C28	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C30	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C31	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C32	1-131-727-11	TANTALUM CHIP	470uF	20%	2.5V
C33	1-137-859-11	TANTALUM CHIP	220uF	20%	4V
C34	1-115-156-11	CERAMIC CHIP	1uF		10V
C35	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C36	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C38	1-115-156-11	CERAMIC CHIP	1uF		10V
C39	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C40	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C41	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C42	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C43	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C45	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C47	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C48	1-162-919-11	CERAMIC CHIP	22PF	5%	50V (JE)
C48	1-216-864-11	SHORT CHIP	0 (EXCEPT JE)		
C49	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V (JE)
C50	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (US, PA)
C51	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C52	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C53	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C55	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C56	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (US, PA)
C101	1-115-156-11	CERAMIC CHIP	1uF		10V
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-115-156-11	CERAMIC CHIP	1uF		10V
C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C105	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C106	1-115-156-11	CERAMIC CHIP	1uF		10V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-164-156-11	CERAMIC CHIP	0.1uF		25V

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MAIN

Ref. No.	Part No.	Description			Remark
C109	1-115-156-11	CERAMIC CHIP	1uF		10V
C110	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C111	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C112	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C113	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C115	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C116	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C117	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C118	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C119	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C120	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C121	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C122	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C123	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C124	1-115-156-11	CERAMIC CHIP	1uF		10V
C125	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C126	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C127	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C128	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C129	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C130	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (US, PA, JE)
C132	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
		< FILTER >			
CF1	1-813-214-21	FILTER, CERAMIC			
CF2	1-767-480-11	FILTER, CERAMIC (AM)			
CF3	1-795-410-21	FILTER, CERAMIC			
		< CONNECTOR >			
CN1	1-573-927-11	CONNECTOR, FFC/FPC (ZIF) 18P			
		< TRIMMER >			
CT1	1-141-615-21	CAP, ADJ			
CT3	1-141-615-21	CAP, ADJ			
		< DIODE >			
D1	8-719-075-24	DIODE HVC363BTRU (JE)			
D1	8-719-076-23	DIODE HVC202B TRU (EXCEPT JE)			
D2	8-719-076-23	DIODE HVC202B TRU (EXCEPT JE)			
D4	8-719-075-24	DIODE HVC363BTRU (JE)			
D4	8-719-076-23	DIODE HVC202B TRU (EXCEPT JE)			
D5	8-719-072-59	DIODE SVC347S-TL-E			
D101	8-719-083-63	DIODE UDZSTE-1713B			
D102	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC1	6-703-664-01	IC TA2154AFN-EL			
IC101	6-804-954-01	IC TC9329AFAG-609 (S.D)			
IC102	8-759-690-96	IC XC61CN1002NR			
IC103	6-701-978-01	IC XC61CN0802NR			
		< SHORT >			
JC1	1-218-990-11	SHORT CHIP	0		
JC2	1-218-990-11	SHORT CHIP	0		
JC3	1-216-864-11	SHORT CHIP	0 (US, PA)		

Ref. No.	Part No.	Description			Remark
		< COIL >			
L1	1-456-743-21	COIL, RF (FM)			
L3	1-414-684-11	INDUCTOR	27nH (EXCEPT JE)		
L3	1-414-685-11	INDUCTOR	33nH (JE)		
L4	1-419-843-21	COIL, FERRITE-ROD ANTENNA (MW)			
L5	1-412-963-11	INDUCTOR	100uH		
L6	1-419-972-21	COIL (AM OSC)			
L9	1-412-967-31	INDUCTOR	0.1uH		
L10	1-412-995-21	INDUCTOR	22uH		
L11	1-412-975-31	INDUCTOR	0.47uH (JE)		
L101	1-412-995-21	INDUCTOR	22uH		
L102	1-412-995-21	INDUCTOR	22uH		
		< LIQUID CRYSTAL DISPLAY >			
LCD1	1-805-704-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q1	8-729-423-52	TRANSISTOR	2SC3931-C		
Q2	8-729-028-74	TRANSISTOR	DTA114TUA-T106		
Q3	8-729-109-44	FET	2SK94-X4		
Q5	8-729-028-76	TRANSISTOR	DTA114YUA-T106		
Q6	8-729-029-15	TRANSISTOR	DTC144TUA-T106		
Q7	8-729-029-15	TRANSISTOR	DTC144TUA-T106		
Q8	8-729-029-15	TRANSISTOR	DTC144TUA-T106		
Q9	8-729-029-15	TRANSISTOR	DTC144TUA-T106		(EXCEPT JE)
Q101	8-729-037-92	TRANSISTOR	2SD2216J-R (TX).SO		
Q102	8-729-037-92	TRANSISTOR	2SD2216J-R (TX).SO		
Q103	8-729-037-92	TRANSISTOR	2SD2216J-R (TX).SO		
Q104	8-729-037-92	TRANSISTOR	2SD2216J-R (TX).SO		
Q105	6-550-044-01	TRANSISTOR	2SB1689-T106		
		< RESISTOR >			
R1	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2	1-218-945-11	RES-CHIP	220	5%	1/16W
R3	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4	1-218-977-11	RES-CHIP	100K	5%	1/16W
R7	1-218-981-11	RES-CHIP	220K	5%	1/16W
R8	1-218-977-11	RES-CHIP	100K	5%	1/16W
R10	1-218-965-11	RES-CHIP	10K	5%	1/16W
R11	1-218-989-11	RES-CHIP	1M	5%	1/16W
R12	1-218-933-11	RES-CHIP	22	5%	1/16W
R13	1-218-941-11	RES-CHIP	100	5%	1/16W
R14	1-218-941-11	RES-CHIP	100	5%	1/16W
R15	1-218-953-11	RES-CHIP	1K	5%	1/16W
R16	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R19	1-218-953-11	RES-CHIP	1K	5%	1/16W
R20	1-218-990-11	SHORT CHIP	0 (JE)		
R21	1-218-941-11	RES-CHIP	100	5%	1/16W (EXCEPT JE)
R22	1-218-990-11	SHORT CHIP	0		
R101	1-218-965-11	RES-CHIP	10K	5%	1/16W
R102	1-218-989-11	RES-CHIP	1M	5%	1/16W
R103	1-218-985-11	RES-CHIP	470K	5%	1/16W
R104	1-218-977-11	RES-CHIP	100K	5%	1/16W
R105	1-218-965-11	RES-CHIP	10K	5%	1/16W
R106	1-218-989-11	RES-CHIP	1M	5%	1/16W

Ref. No.	Part No.	Description			Remark
R107	1-218-953-11	RES-CHIP	1K	5%	1/16W
R108	1-218-953-11	RES-CHIP	1K	5%	1/16W
R109	1-218-953-11	RES-CHIP	1K	5%	1/16W
R110	1-218-953-11	RES-CHIP	1K	5%	1/16W
R111	1-218-953-11	RES-CHIP	1K	5%	1/16W
R112	1-218-953-11	RES-CHIP	1K	5%	1/16W
R113	1-218-953-11	RES-CHIP	1K	5%	1/16W
R114	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R115	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R116	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R117	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R118	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R119	1-218-977-11	RES-CHIP	100K	5%	1/16W (US, PA)
R120	1-218-977-11	RES-CHIP	100K	5%	1/16W (EXCEPT US, PA)
R121	1-218-977-11	RES-CHIP	100K	5%	1/16W (US, PA, JE)
R122	1-218-977-11	RES-CHIP	100K	5%	1/16W (EXCEPT US, PA, JE)
R123	1-218-953-11	RES-CHIP	1K	5%	1/16W
R124	1-218-953-11	RES-CHIP	1K	5%	1/16W
R125	1-218-953-11	RES-CHIP	1K	5%	1/16W
R126	1-218-953-11	RES-CHIP	1K	5%	1/16W
R127	1-218-977-11	RES-CHIP	100K	5%	1/16W
R128	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R129	1-218-965-11	RES-CHIP	10K	5%	1/16W
R130	1-218-929-11	RES-CHIP	10	5%	1/16W
R131	1-218-977-11	RES-CHIP	100K	5%	1/16W
R132	1-218-973-11	RES-CHIP	47K	5%	1/16W
R133	1-218-973-11	RES-CHIP	47K	5%	1/16W
R134	1-218-953-11	RES-CHIP	1K	5%	1/16W
R135	1-218-977-11	RES-CHIP	100K	5%	1/16W
R136	1-218-965-11	RES-CHIP	10K	5%	1/16W
		< SWITCH >			
S101	1-771-627-21	SWITCH, TACTILE (POWER)			
		< TRANSFORMER >			
T101	1-437-650-21	TRANSFORMER, DC/DC CONVERTER			
		< VIBRATOR >			
X101	1-767-388-11	VIBRATOR, CRYSTAL (75kHz)			
**********					
		MISCELLANEOUS			
		**********			
66	1-679-616-11	CONNECTION FLEXIBLE BOARD			
**********					

Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		**********	
	2-190-358-11	MANUAL, INSTRUCTION (ENGLISH, JAPANESE, KOREAN, SIMPLIFIED CHINESE) (JE)	
	2-190-358-21	MANUAL, INSTRUCTION (ENGLISH, SPANISH, TRADITIONAL CHINESE) (E)	
	2-190-358-31	MANUAL, INSTRUCTION (ENGLISH, SPANISH, FRENCH, GERMAN, SIMPLIFIED CHINESE) (EXCEPT E, JE)	
	2-190-358-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN, PORTUGUESE, FINNISH) (AEP)	
	8-954-008-80	RECEIVER MDR-E808LP/SC SET	

REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2004.11	New
1.1	2004.12	Addition of US, AEP and Australian models
1.2	2005.02	Addition of Panama model